

GSTMMBT2907AF

PNP General Purpose Transistor

Product Description

Collector-Emitter Voltage -60V
Collector Current -600mA

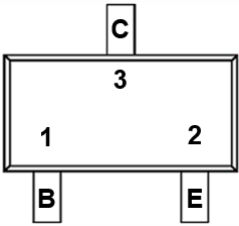
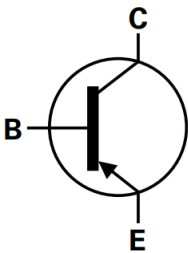
Features

- Ideal for Low-Power Amplification and Switching
- RoHS Compliant and Halogen Free

Mechanical Data

- Case : SOT-23 Package
- Epoxy meets UL 94 V-0 Flammability Rating

Package and Pin Assignment

SOT-23	Equivalent Circuit								
									
<table><tr><th>Pin</th><th>Description</th></tr><tr><td>1</td><td>BASE</td></tr><tr><td>2</td><td>EMITTER</td></tr><tr><td>3</td><td>COLLECTOR</td></tr></table>	Pin	Description	1	BASE	2	EMITTER	3	COLLECTOR	
Pin	Description								
1	BASE								
2	EMITTER								
3	COLLECTOR								

Ordering and Marking Information

Ordering Information			
Part Number	Package	Marking Code	Quantity/Reel
GSTMMBT2907AF	SOT-23	2F	3,000 PCS
GSTMMBT2907AF			
- Product Code: GSTMMBT2907A		- Green Level: F for RoHS Compliant and Halogen Free	
Marking Information			
2F			
- Product Code: 2F			

Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Symbol	Parameter	Rating	Unit
V _{CBO}	Collector-Base Voltage	-60	V
V _{CEO}	Collector-Emitter Voltage	-60	V
V _{EBO}	Emitter-Base Voltage	-5	V
I _C	Collector Current	-600	mA
P _C	Collector Power Dissipation	350	mW
R _{ΘJA}	Thermal Resistance From Junction To Ambient ¹	357	°C/W
T _J	Junction Temperature	-55~+150	°C
T _{STG}	Storage Temperature	-55~+150	°C

NOTE:

1. For a device mounted on 15 mm x 15mm recommended pad layout 1oz copper that is on a single-sided FR-4 PCB;

Electrical Characteristics (T_A=25°C unless otherwise specified)

Symbol	Description	Conditions	Min	Max	Unit
V _{CEO}	Collector-Emitter Breakdown Voltage	I _C =-10mA, I _B =0	-60		V
V _{CBO}	Collector-Base Breakdown Voltage	I _C =-10μA, I _E =0	-60		V
V _{EBO}	Emitter-Base Breakdown Voltage	I _E =-10μA, I _C =0	-5.0		V
I _{CBO}	Collector Cutoff Current	V _{CB} =-50V, I _E =0V		-100	nA
I _{CEX}	Collector Cutoff Current	V _{CE} =-30V, V _{BE} =-0.5V		-50	nA
I _{BL}	Base Cutoff Current	V _{CE} =-30V, V _{BE} E=-0.5V		-50	nA
h _{FE}	DC Current Gain	I _C =-0.1mA, V _{CE} =-10V	75		
		I _C =-1.0mA, V _{CE} =-10V	100		
		I _C =-10mA, V _{CE} =-10V	100		
		I _C =-150mA, V _{CE} =-10V	100	300	
		I _C =-500mA, V _{CE} =-10V	50		
V _{CE(SAT)}	Collector-Emitter Saturation Voltage	I _C =-150mA, I _B =-15mA		-0.4	V
		I _C =-500mA, I _B =-50mA		-1.6	V
V _{BE(SAT)}	Base-Emitter Saturation Voltage	I _C =-150mA, I _B =-15mA		-1.3	V
		I _C =-500mA, I _B =-50mA		-2.6	V
f _T	Current Gain-Bandwidth Product	I _C =-50mA, V _{CE} =-20V,f=100MHz	200		MHZ

Electrical Characteristics (T_A=25°C unless otherwise specified)

Symbol	Description	Conditions	Min	Max	Unit
Switching Characteristic					
t _d	Delay Time	V _{CE} = -30V, I _C = -50mA, I _{B1} = -15mA		10	ns
t _r	Rise Time	V _{CE} = -30V, I _C = -50mA, I _{B1} = -15mA		40	ns
t _s	Storage Time	V _{CE} = -6.0V, I _C = -150mA, I _{B1} = -I _{B2} = -15mA		80	ns
t _f	Fall Time	V _{CE} = -6.0V, I _C = -150mA, I _{B1} = -I _{B2} = -15mA		30	ns

Typical Characteristics

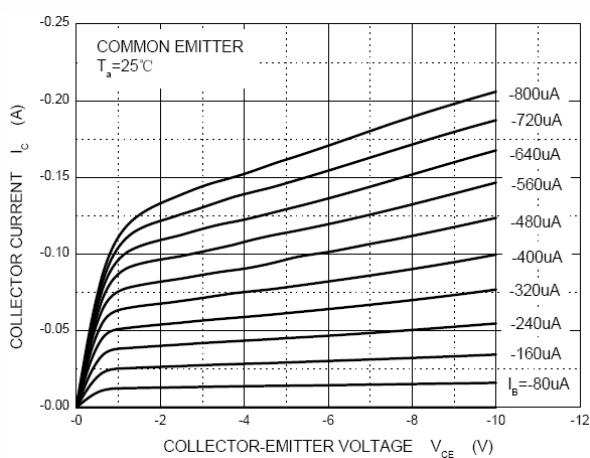


Figure 1. Static Characteristic

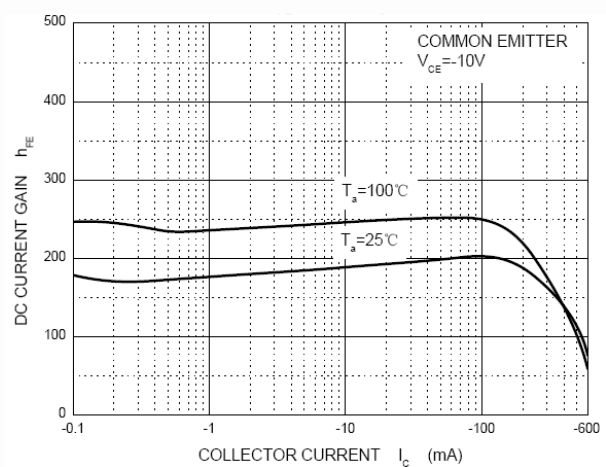


Figure 2. h_{FE}---I_C

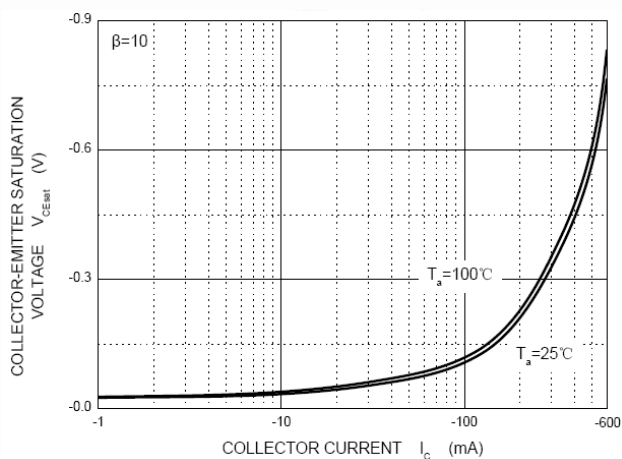


Figure 3. V_{CESAT}---I_C

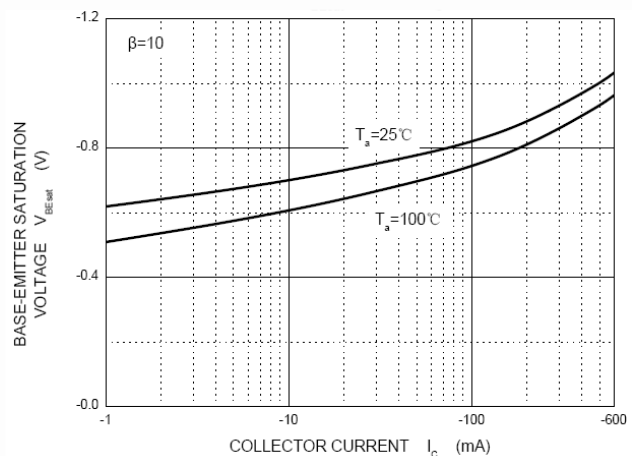


Figure 4. V_{BESAT}---I_C

Typical Characteristics (Continue)

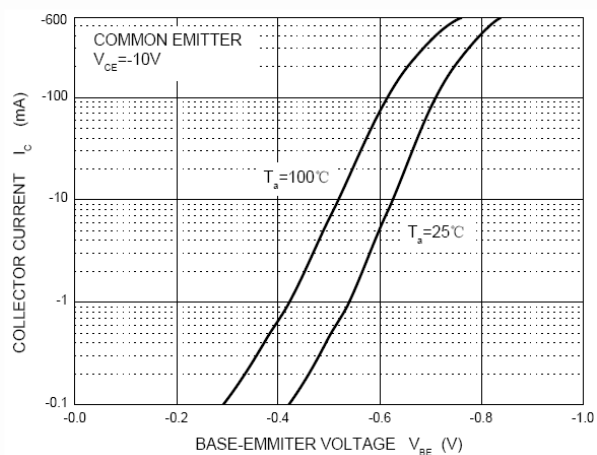


Figure 5. I_C --- V_{BE}

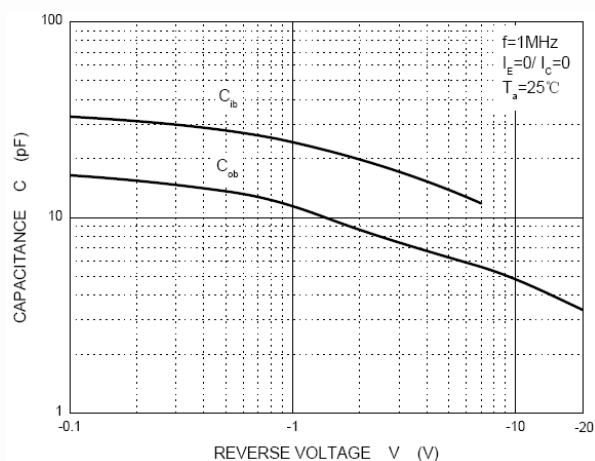


Figure 6. C_{ob}/C_{ib} --- V_{CB}/V_{BE}

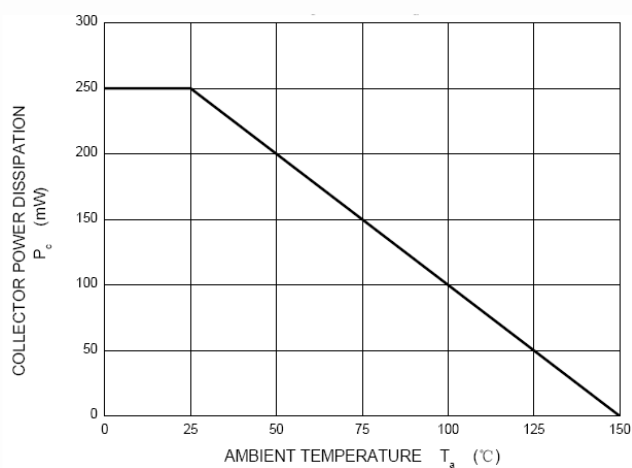
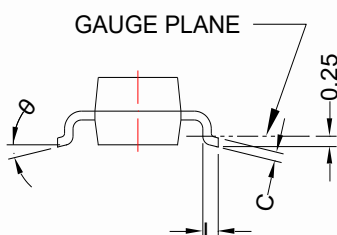
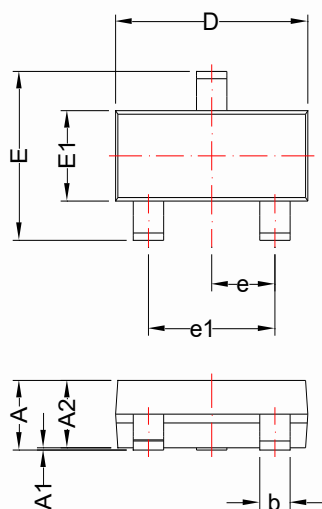


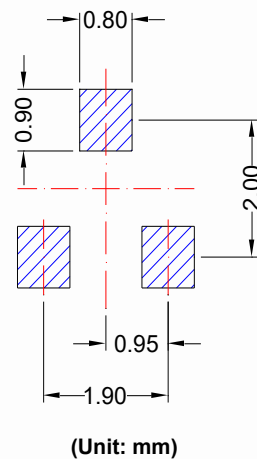
Figure 7. P_{CE} --- T_A

SOT-23

Package Dimension



Recommended Land Pattern



Dimensions

SYMBOL	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	0.75	1.17	0.030	0.046
A1	0.01	0.15	0.000	0.006
A2	0.70	1.02	0.028	0.040
b	0.30	0.50	0.012	0.020
c	0.08	0.20	0.003	0.008
D	2.80	3.04	0.110	0.120
E	2.10	2.64	0.083	0.104
E1	1.20	1.40	0.047	0.055
e	0.95 BSC		0.037 BSC	
e1	1.90 BSC		0.075 BSC	
L	0.3	0.6	0.012	0.024
θ	0°	8°	0°	8°

NOTE:

Dimensions are exclusive of Burrs, Mold Flash and Tie Bar extrusions.

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